

## **ABSTRACT OF THE INVENTION**

A medical device comprising a substrate and a hydrogel coating disposed over at least a portion of the substrate surface. The hydrogel coating contains an MRI contrast agent and includes inner and outer regions. The inner region comprises a first hydrogel polymer, and the outer region comprises a second hydrogel polymer that can be the same as or different from the first hydrogel polymer. The inner region exhibits more absorption upon hydration than does the outer region. Examples of hydrogel polymers include polysaccharide and polypeptide hydrogel polymers such as alginic acid, hyaluronic acid, chitin, carboxymethyl cellulose, hydroxypropyl cellulose, collagen, and gelatin, as well as salts and copolymers thereof. Upon insertion or implantation of the medical device into a patient, the hydrogel coating is differentiable from the environment surrounding the hydrogel coating under magnetic resonance imaging.